

International body armor standards

NIJ Standard 0101.04

Armor Type	Test-Bullet	Bullet-Producer	Bullet-Weight (g)	Bullet-Velocity (m/s)	Distance (m)	Max. BFD (mm)	Angle Test (°)	Wet test	Padding down	No. of shots per panel	No. of tests
I	.22 caliber LR FMJ	not spec.	2.6	1229 ± 9	5	44	0°	yes	Yes	6	4
	.380 ACP FMJ RN	not spec.	6.2	322 ± 9	5	44	0°	yes	Yes	6	4
II-A	9 mm FMJ RN	not spec.	8.0	341 ± 9	5	44	0°	yes	Yes	6	4
	.40 S&W FMJ	not spec.	10.2	322 ± 9	5	44	0°	yes	Yes	6	4
II	9 mm FMJ RN	not spec.	8.0	367 ± 9	5	44	0°	yes	Yes	6	4
	.357 Mag. JSP	not spec.	10.2	436 ± 9	5	44	0°	yes	Yes	6	4
III	9 mm FMJ RN	not spec.	8.0	436 ± 9	5	44	0°	yes	Yes	6	4
	.44 Mag. JHP	not spec.	15.6	436 ± 9	5	44	0°	yes	Yes	6	4
III	7.62 mm Nato FMJ	not spec.	9.6	847 ± 9	15	44	0°	yes	Yes	6	2
	.30 caliber M2 AP	not spec.	10.8	878 ± 9	15	44	0°	yes	Yes	1	2

Particularities:
Backing material: Roma No. 1 10mm ± 2mm (1.03 kg sphere from 2m height)
Wet test: 3 min spraying from each side expect the V50 panels
Temperature test: No
Measurement back face deformation: Shot No. 1 + shot No. 2 or 3 (higher velocity fair hit)
V50 requirements: level II-A, II and III-A additional 2 panels V50 using 9 mm 76 mm
Min. distance from the edges: 75 mm
Min. distance from previous shots: 51 mm



NIJ Standard 0101.04, USA

NIJ Standard 0101.06

Armor Type	Test-Bullet	Bullet-Producer	Bullet-Weight (g)	Bullet-Velocity (m/s)	Distance (m)	Max. BFD (mm)	Angle Test (°)	Wet test	Padding down	No. of shots per panel	No. of tests and conditioning
I-A	9 mm FMJ RN	Remington	8.0	373 ± 9	5	44	0°	yes	Yes	6	8 wet 4 dry
	.40 S&W FMJ	Remington	11.7	352 ± 9	5	44	0°	yes	Yes	6	8 wet 4 dry
II	9 mm FMJ RN	Remington	8.0	398 ± 9	5	44	0°	yes	Yes	6	8 wet 4 dry
	.357 Mag. JSP	Remington	10.2	436 ± 9	5	44	0°	yes	Yes	6	8 wet 4 dry
III-A	.357 S&G FMJ FN	Speer	8.1	448 ± 9	5	44	0°	yes	Yes	6	8 wet 4 dry
	.44 Mag. JHP	Speer	15.6	436 ± 9	5	44	0°	yes	Yes	6	8 wet 4 dry
III	7.62 mm Nato FMJ	not spec.	9.6	847 ± 9	5	44	0°	yes	Yes	6	4 wet (24 shots)
	.30 caliber M2 AP	not spec.	10.8	878 ± 9	15	44	0°	yes	Yes	1-6	4-24 wet (24 shots)

Particularities:
Backing material: Roma No. 1, 19mm ± 2mm, all indiv. values > 16 < 22 mm (1.03 kg sphere from 2m height) 30 mm vertical immersion, 10 min dripping of the unaged panels
Wet test: No
Temperature test: No
Measurement BFD: Shot No. 1, 2 and 3 = 44mm, if not estimated probability of BFD > 44 mm has to be < 20%; also measured for aged panels, but no fall criteria if = 44mm
Min. distance from the edges: Lighter bullet min. not greater than 51 mm (2"); heavier bullet min. not greater than 76 mm (3")
Min. distance from previous shots: 51 mm
Particularities level II-A, II and III-A:
 5 di. sizes speed ed. Manufacturer has to choose range of sizes. Smallest and largest size have to be tested 50/50% for perforation and BFD test
Conditioning: Tumbling for 10 d at 65°C (149°F) and 80% RH with 5 ± 1 rpm (22,000 ± 1500 rotations)
V50 requirements: New: 120 shots (10 panels) each caliber largest size. No penetration below max. ref. speed. (VLS new Ver. new)
 24 shots (2 panels) for each caliber largest size. No penetration below max. ref. speed
Shoot pattern: Shots 4, 5 and 6 have to be within a 100 mm (3.94")
Particularities level III and IV:
Conditioning: 10 d at 65°C (149°F) and 80% RH + 24h between -15°C and +90°C + 2 drops level III Conditioned: 24 shots (4 plates). No penetration below max. ref. speed
V50 requirements: 12 shots (2-12 plates). No penetration below max. ref. speed
Level IV Conditioned: 12 shots (2-12 plates). No penetration below max. ref. speed

Test-Bullet	Bullet-Producer	Bullet-Weight (g)	Bullet-Velocity (m/s)	Distance (m)	Max. BFD (mm)	Angle Test (°)	Wet test	Padding down	No. of shots per panel	No. of tests and conditioning
.22 LR/HV lead RN 2.6g		2.6	1229 ± 9	5	44	0°	yes	Yes	6	4
.22 LR lead RN 2.6g		2.6	1229 ± 9	5	44	0°	yes	Yes	6	4
.45x18 FMJ st. core 2.5g		2.5	1229 ± 9	5	44	0°	yes	Yes	6	4
.635 Browning FMJ SC Geoc 3.2g		3.2	1229 ± 9	5	44	0°	yes	Yes	6	4
.22 Win. Mag. FMJ SC 2.6g		2.6	1229 ± 9	5	44	0°	yes	Yes	6	4
7.62x25 Tokarev FMJ SC 5.5g		5.5	1229 ± 9	5	44	0°	yes	Yes	6	4
7.62x25 Tokarev CZ/MJ st. core 5.5g		5.5	1229 ± 9	5	44	0°	yes	Yes	6	4
7.62 x 25 Tokarev China FMJ st. core 5.5g		5.5	1229 ± 9	5	44	0°	yes	Yes	6	4
7.62x25 Tokarev Russia FMJ st. core 5.5g		5.5	1229 ± 9	5	44	0°	yes	Yes	6	4
9x19 Para FMJ SC DM 11 A1 B2 8 g		8	1229 ± 9	5	44	0°	yes	Yes	6	4
9x19 Para FMJ SC DM 11 A1 B2 8 g shot in 90° (0°) direction		8	1229 ± 9	5	44	0°	yes	Yes	6	4
9x19 Para FMJ SC DM 11 A1 B2 8 g shot in 25° (65°) direction		8	1229 ± 9	5	44	0°	yes	Yes	6	4
9x19 Para FMJ SC DM 11 A1 B2 8 g shot in 90° (0°) direction		8	1229 ± 9	5	44	0°	yes	Yes	6	4
9x19 Para FMJ SC DM 11 A1 B2 8 g shot in 25° (65°) direction		8	1229 ± 9	5	44	0°	yes	Yes	6	4
9x19 Para FMJ SC DM 11 A1 B2 8 g shot in 90° (0°) direction		8	1229 ± 9	5	44	0°	yes	Yes	6	4
9x19 Para FMJ SC DM 11 A1 B2 8 g shot in 25° (65°) direction		8	1229 ± 9	5	44	0°	yes	Yes	6	4
9x19 Para FMJ SC DM 11 A1 B2 8 g shot in 90° (0°) direction		8	1229 ± 9	5	44	0°	yes	Yes	6	4
9x19 Para FMJ SC DM 11 A1 B2 8 g shot in 25° (65°) direction		8	1229 ± 9	5	44	0°	yes	Yes	6	4
9x19 Para FMJ SC DM 11 A1 B2 8 g shot in 90° (0°) direction		8	1229 ± 9	5	44	0°	yes	Yes	6	4
9x19 Para FMJ SC DM 11 A1 B2 8 g shot in 25° (65°) direction		8	1229 ± 9	5	44	0°	yes	Yes	6	4
9x19 Para FMJ SC DM 11 A1 B2 8 g shot in 90° (0°) direction		8	1229 ± 9	5	44	0°	yes	Yes	6	4
9x19 Para FMJ SC DM 11 A1 B2 8 g shot in 25° (65°) direction		8	1229 ± 9	5	44	0°	yes	Yes	6	4
9x19 Para FMJ SC DM 11 A1 B2 8 g shot in 90° (0°) direction		8	1229 ± 9	5	44	0°	yes	Yes	6	4
9x19 Para FMJ SC DM 11 A1 B2 8 g shot in 25° (65°) direction		8	1229 ± 9	5	44	0°	yes	Yes	6	4
9x19 Para FMJ SC DM 11 A1 B2 8 g shot in 90° (0°) direction		8	1229 ± 9	5	44	0°	yes	Yes	6	4
9x19 Para FMJ SC DM 11 A1 B2 8 g shot in 25° (65°) direction		8	1229 ± 9	5	44	0°	yes	Yes	6	4
9x19 Para FMJ SC DM 11 A1 B2 8 g shot in 90° (0°) direction		8	1229 ± 9	5	44	0°	yes	Yes	6	4
9x19 Para FMJ SC DM 11 A1 B2 8 g shot in 25° (65°) direction		8	1229 ± 9	5	44	0°	yes	Yes	6	4
9x19 Para FMJ SC DM 11 A1 B2 8 g shot in 90° (0°) direction		8	1229 ± 9	5	44	0°	yes	Yes	6	4
9x19 Para FMJ SC DM 11 A1 B2 8 g shot in 25° (65°) direction		8	1229 ± 9	5	44	0°	yes	Yes	6	4
9x19 Para FMJ SC DM 11 A1 B2 8 g shot in 90° (0°) direction		8	1229 ± 9	5	44	0°	yes	Yes	6	4
9x19 Para FMJ SC DM 11 A1 B2 8 g shot in 25° (65°) direction		8	1229 ± 9	5	44	0°	yes	Yes	6	4
9x19 Para FMJ SC DM 11 A1 B2 8 g shot in 90° (0°) direction		8	1229 ± 9	5	44	0°	yes	Yes	6	4
9x19 Para FMJ SC DM 11 A1 B2 8 g shot in 25° (65°) direction		8	1229 ± 9	5	44	0°	yes	Yes	6	4
9x19 Para FMJ SC DM 11 A1 B2 8 g shot in 90° (0°) direction		8	1229 ± 9	5	44	0°	yes	Yes	6	4
9x19 Para FMJ SC DM 11 A1 B2 8 g shot in 25° (65°) direction		8	1229 ± 9	5	44	0°	yes	Yes	6	4
9x19 Para FMJ SC DM 11 A1 B2 8 g shot in 90° (0°) direction		8	1229 ± 9	5	44	0°	yes	Yes	6	4
9x19 Para FMJ SC DM 11 A1 B2 8 g shot in 25° (65°) direction		8	1229 ± 9	5	44	0°	yes	Yes	6	4
9x19 Para FMJ SC DM 11 A1 B2 8 g shot in 90° (0°) direction		8	1229 ± 9	5	44	0°	yes	Yes	6	4
9x19 Para FMJ SC DM 11 A1 B2 8 g shot in 25° (65°) direction		8	1229 ± 9	5	44	0°	yes	Yes	6	4
9x19 Para FMJ SC DM 11 A1 B2 8 g shot in 90° (0°) direction		8	1229 ± 9	5	44	0°	yes	Yes	6	4
9x19 Para FMJ SC DM 11 A1 B2 8 g shot in 25° (65°) direction		8	1229 ± 9	5	44	0°	yes	Yes	6	4
9x19 Para FMJ SC DM 11 A1 B2 8 g shot in 90° (0°) direction		8	1229 ± 9	5	44	0°	yes	Yes	6	4
9x19 Para FMJ SC DM 11 A1 B2 8 g shot in 25° (65°) direction		8	1229 ± 9	5	44	0°	yes	Yes	6	4
9x19 Para FMJ SC DM 11 A1 B2 8 g shot in 90° (0°) direction		8	1229 ± 9	5	44	0°	yes	Yes	6	4
9x19 Para FMJ SC DM 11 A1 B2 8 g shot in 25° (65°) direction		8	1229 ± 9	5	44	0°	yes	Yes	6	4
9x19 Para FMJ SC DM 11 A1 B2 8 g shot in 90° (0°) direction		8	1229 ± 9	5	44	0°	yes	Yes	6	4
9x19 Para FMJ SC DM 11 A1 B2 8 g shot in 25° (65°) direction		8	1229 ± 9	5	44	0°	yes	Yes	6	4
9x19 Para FMJ SC DM 11 A1 B2 8 g shot in 90° (0°) direction		8	1229 ± 9	5	44	0°	yes	Yes	6	4
9x19 Para FMJ SC DM 11 A1 B2 8 g shot in 25° (65°) direction		8	1229 ± 9	5	44	0°	yes	Yes	6	4
9x19 Para FMJ SC DM 11 A1 B2 8 g shot in 90° (0°) direction		8	1229 ± 9	5	44	0°	yes	Yes	6	4
9x19 Para FMJ SC DM 11 A1 B2 8 g shot in 25° (65°) direction		8	1229 ± 9	5	44	0°	yes	Yes	6	4
9x19 Para FMJ SC DM 11 A1 B2 8 g shot in 90° (0°) direction		8	1229 ± 9	5	44	0°	yes	Yes	6	4
9x19 Para FMJ SC DM 11 A1 B2 8 g shot in 25° (65°) direction		8	1229 ± 9	5	44	0°	yes	Yes	6	4
9x19 Para FMJ SC DM 11 A1 B2 8 g shot in 90° (0°) direction		8	1229 ± 9	5	44	0°	yes	Yes	6	4
9x19 Para FMJ SC DM 11 A1 B2 8 g shot in 25° (65°) direction		8	1229 ± 9	5	44	0°	yes	Yes	6	4
9x19 Para FMJ SC DM 11 A1 B2 8 g shot in 90° (0°) direction		8	1229 ± 9	5	44	0°	yes	Yes	6	4
9x19 Para FMJ SC DM 11 A1 B2 8 g shot in 25° (65°) direction		8	1229 ± 9	5	44	0°	yes	Yes	6	4
9x19 Para FMJ SC DM 11 A1 B2 8 g shot in 90° (0°) direction		8	1229 ± 9	5	44	0°	yes	Yes	6	4
9x19 Para FMJ SC DM 11 A1 B2 8 g shot in 25° (65°) direction		8	1229 ± 9	5	44	0°	yes	Yes	6	4
9x19 Para FMJ SC DM 11 A1 B2 8 g shot in 90° (0°) direction		8	1229 ± 9	5	44	0°	yes	Yes	6	4
9x19 Para FMJ SC DM 11 A1 B2 8 g shot in 25° (65°) direction		8	1229 ± 9	5	44	0°	yes	Yes	6	4
9x19 Para FMJ SC DM 11 A1 B2 8 g shot in 90° (0°) direction		8	1229 ± 9	5	44	0°	yes	Yes	6	4
9x19 Para FMJ SC DM 11 A1 B2 8 g shot in 25° (65°) direction		8	1229 ± 9	5	44	0°	yes	Yes	6	4
9x19 Para FMJ SC DM 11 A1 B2 8 g shot in 90° (0°) direction		8	1229 ± 9	5	44	0°	yes	Yes	6	4
9x19 Para FMJ SC DM 11 A1 B2 8 g shot in 25° (65°) direction		8	1229 ± 9	5	44	0°	yes	Yes	6	4
9x19 Para FMJ SC DM 11 A1 B2 8 g shot in 90° (0°) direction		8	1229 ± 9	5	44	0°	yes	Yes	6	4
9x19 Para FMJ SC DM 11 A1 B2 8 g shot in 25° (65°) direction		8	1229 ± 9	5	44	0°	yes	Yes	6	4
9x19 Para FMJ SC DM 11 A1 B2 8 g shot in 90° (0°) direction		8	1229 ± 9	5	44	0°	yes	Yes	6	4
9x19 Para FMJ SC DM 11 A1 B2 8 g shot in 25° (65°) direction		8	1229 ± 9	5	44	0°	yes	Yes	6	4
9x19 Para FMJ SC DM 11 A1 B2 8 g shot in 90° (0°) direction		8	1229 ± 9	5	44	0°	yes	Yes	6	4
9x19 Para FMJ SC DM 11 A1 B2 8 g shot in 25° (65°) direction		8	1229 ± 9	5	44	0°	yes	Yes	6	4
9x19 Para FMJ SC DM 11 A1 B2 8 g shot in 90° (0°) direction		8	1229 ± 9	5	44	0°	yes	Yes	6	4
9x19 Para FMJ SC DM 11 A1 B2 8 g shot in 25° (65°) direction		8	1229 ± 9	5	44	0°	yes	Yes	6	4
9x19 Para FMJ SC DM 11 A1 B2 8 g shot in 90° (0°) direction										